

CALIFORNIA DIVISION OF MINES AND GEOLOGY

FAULT EVALUATION REPORT FER-76

No. 1
SUPPLEMENT MARCH 23, 1979

Two brief field visits (one in the company of Michael Kennedy), and the aquisition of excellent Fairchild air photos have yielded the following notes and comments on the Elsinore fault between Lake Elsinore and the south boundary of Riverside County.

*not the same
Loc. S4 as in the
11/14/78 report
of Lohr.*

Locality S4. This is a side-hill cut probably made during an investigation by Lewis S. Lohr (1977d, C-232; GR-84). Lohr showed no log. Wet weather has degraded the face but a photo was taken (10-24-78) of a well exposed fault of small displacement that displaces soil (FER-76 sup. figures 1 and 2).

Locality S5. Here are two exposures in which carbonate crusted shear planes or fractures in bedrock cut the soil-rock contact. Both are near the mapped trace (Kennedy, 1977) of a fault in the zone of the Wolf Valley fault. These features may be relics of the shattered-ridge effect caused by ground acceleration during an earthquake (FER-76 sup. figure 3).

A site investigation by Gary S. Rasmussen and Associates (unpublished) on a large tract northwest of Murrieta (FER-76 sup. figure 4) led to trenching across several traces of the Willard fault as shown by Kennedy, (1977; FER-76 sup. figure 4). Rasmussens' report is negative on faulting of any identifiably Holocene sediments or soils. At this writing Rasmussens' map and trench locations are not available from Riverside

FER-76 sup.

County because no application for development has been made (phone conversation with Anthony B. Brown, Riverside County Planning Department, March 20, 1979). FER-76 sup. figure 4 is based upon Rasmussens' index map, a copy of which was furnished by Anthony B. Brown.

Fairchild photos of the Temecula area, taken before much of the present development, show extremely well defined, almost pristine, fault traces on the Wildomar fault, especially some of the features, or lines and scarps closely associated with the features described as locality S1.

In the course of our visit to the field Kennedy concurred in the choice of the Wildomar fault for zoning but expressed doubt that enough attention was being focused on the Wolf Valley fault.

At the south end of Kennedys' map, in sections 28, 33 and 34 (FER-76 sup. figure 3), in the Pechanga Indian Reservation, there is a group of shallow, closed depressions in the zone of the Wolf Valley fault. These features appear to constitute ^R(the best) evidence of Holocene activity on the Wolf Valley fault. They are surrounded by deformed, moderately- to well indurated sediments of the late Pleistocene Pauba Formation. Erosion has not had time to fill or to breach these depressions. They are similar to depressions on and near the trace of the Wildomar fault northwest of Wildomar (FER-76 sup. figure 1) where Holocene displacement has been confirmed. The possibility of Holocene displacement at the southeast end of the Wolf Valley fault is further supported by exposures of bedrock-soil fractures or shears described under S5 herein. The southeast segment of the Wolf Valley fault is closer to the trace of

the Wildomar fault than the faults mapped by Kennedy (1977) as the northwest end of the Wolf Valley fault and could as easily be related to, or a part of the Wildomar fault, or at least have had a similar Holocene history.

Conclusions: Because of well defined and probably youthful topographic expression and the presence of a broken bedrock-soil contact that have analogs at sites on the Wildomar fault in an area where Holocene displacement is confirmed and, because of proximity to the zone of the Wildomar fault, it is probable that the southeast segment of the Wolf Valley fault, extending from the S/2 of sec. 28, T. 8 S., R. 2 W., SBBM, southeastward at least as far as the SE/4 of sec. 34, T. 8 S., R. 2 W., SBBM has been the site of Holocene displacement.

Recommendations: The above described segment of the Wolf Valley fault is sufficiently active and well-defined to warrant zoning under the Alquist-Priolo Special Studies Zones Act. That in so doing, the previously recommended zone on the Wildomar fault either be widened to include the southeast segment of the Wolf Valley fault, or that the zone be stepped to the right.

Investigated by:



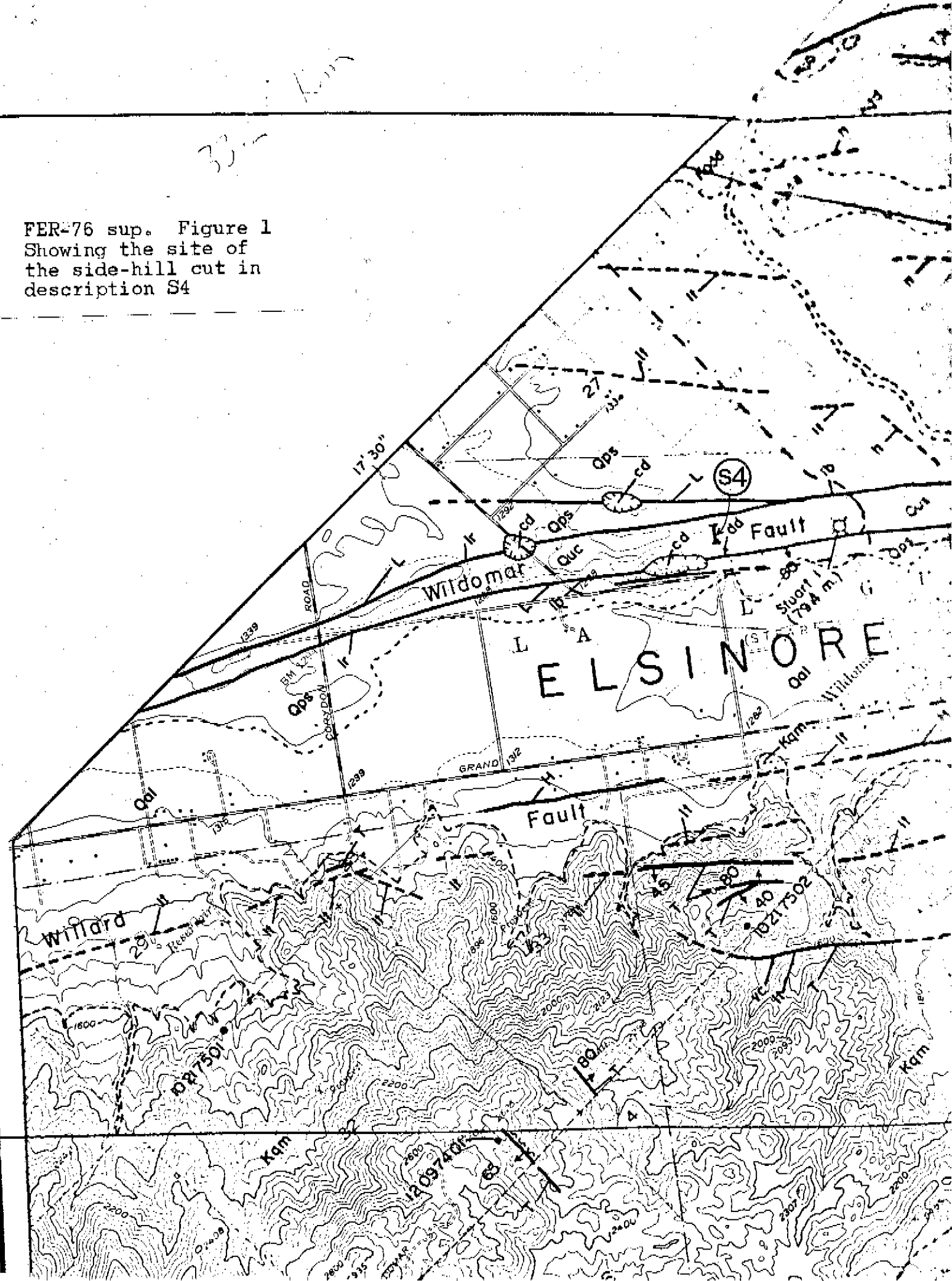
Richard B. Saul
March 23, 1979

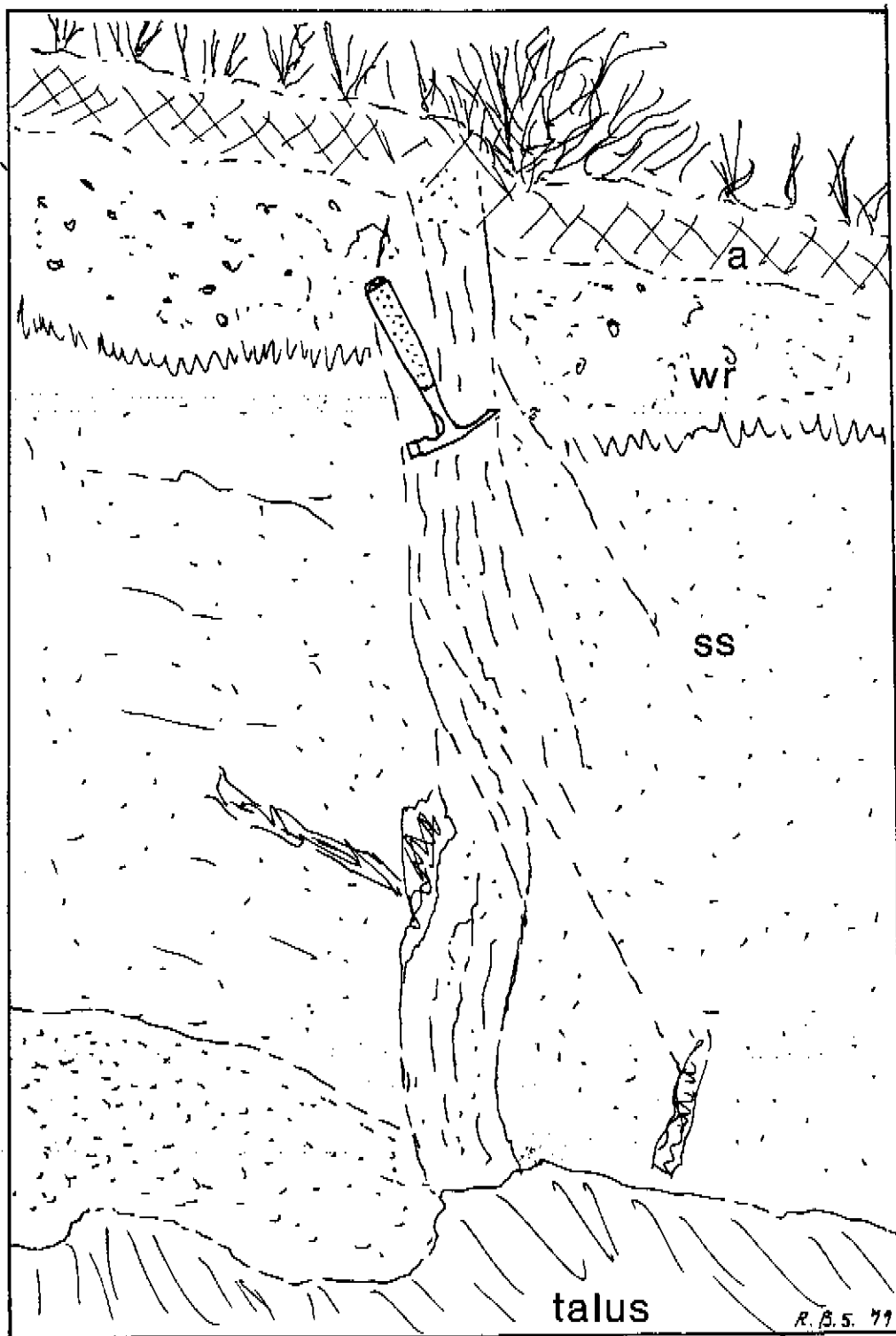
Additional References:

Fairchild Air Photos, 1939, C-5750 Nos. 211-29-33; 211-73-75; 211-83-87.

OK - I concur
with recommendation.
ELLH
3/26/79

33-
 FER-76 sup. Figure 1
 Showing the site of
 the side-hill cut in
 description S4





A rough sketch from a photo of a shear zone in a side-hill cut in the zone of the Wildomar fault (locality 84, FER-76 sup. Figure 1). Units: a, unzonated soil; wr, weathered rock; ss, sandstone.

FER-76 sup. Figure 3
Southeast segment of
the Wolf Valley fault
and sites described
under S5



FER-76 sup. Figure 4
Showing the boundaries
of site investigated by
Rasmussen and Associates

